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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,286	03/18/2004	Chin Hin Oon	70040134-1	7809
57299	7590	09/07/2007		
Kathy Manke Avago Technologies Limited 4380 Ziegler Road Fort Collins, CO 80525			EXAMINER BOUTSIKARIS, LEONIDAS	
			ART UNIT	PAPER NUMBER
			2872	
			NOTIFICATION DATE	DELIVERY MODE
			09/07/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/804,286

Applicant(s)

OON ET AL.

Examiner

Leo Boutsikaris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Suda (US 5,166,784).

Regarding claim 1, Suda discloses a color filter assembly comprising:

a primary filter layer 51 on a sensor 5 (Fig. 2), comprising three spatially separated primary color filters 531, 532, and 533, each of which has a transmission spectrum depicted in Fig. 4 or Fig. 10, the filter layer 51 comprising a transmission band in a first band of wavelengths around a first characteristic wavelength of 538 nm (depicted by 16') at a first location and a second transmission band of wavelengths around a second characteristic wavelength of 631 nm (depicted by 17') at a second location;

a first trim filter 7 (Fig. 13) comprising a layer of material that overlies the first and second locations and having a transmission spectrum which is uniform over all the color filters of layer 51 and preferentially attenuates light at a first trim wavelength of 571 nm (Fig. 12), wherein said first trim wavelength is between the first and second characteristic wavelengths (lines 12-47, col. 3, lines 28-37, col. 4, lines 1-8, col. 7, line 66, col. 9 to line 32, col. 10).

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Furthermore, the location of the (first) null in the transmission function of the first trim filter is such that it affects (i.e., minimizing the transmission of light) the (right/falling) edge of curve 16' of the first band of wavelengths, and it also affects the (left/rising) edge of curve 17' of the second band of wavelengths (see Figs. 10, 12). It is noted that the combined effect of the two layers of filtering is to produce a target transmission function transmitting at desired wavelengths.

Regarding claim 2, the first trim filter further attenuates light at a second trim wavelength of 686 nm (Fig. 12), said first trim wavelength being less than one of the first and second characteristic wavelengths, and the second trim wavelength is greater than either first or second characteristic wavelengths.

Regarding claims 4-5, the primary filter layer 51 comprises colored dyes (lines 27-28, col. 3).

Regarding claim 6, the color filter assembly of Suda, further comprises a second trim filter 6, said second trim filter comprising a layer 61 of material that preferentially attenuates light at a second wavelength of 900 nm that is different from each of the characteristic wavelengths and the first trim wavelength (Fig. 8, lines 54-62, col. 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda (US 5,166,784).

Regarding claim 3, Suda discloses all the limitations of said claim except for teaching that the filter 7 having the transmission spectrum of Fig. 12 is an interference filter instead of a gelatin (i.e., absorption) filter, see lines 38-39, col. 9. However, Suda does teach that the other color filter 62 comprises an interference filter (Fig. 6, lines 39-42, col. 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the filter 7 as an multilayer interference filter, since Official Notice is taken about the wide use of interference color filters for preferentially transmitting light in selective wavelength bands. Interference filters are advantageous compared to absorption filters because they offer great flexibility in designing the desired transmission spectrum according to several controllable parameters (e.g., number of layers, material and thickness of said layers).

Regarding claims 7-11, Suda discloses all the limitations of said claims except for teaching that the filtering operation is achieved by placing the color filters 51 between filters 6 and 7 in a laminated fashion, instead of the disclosed order of filters 6 and 7 being on top of filter layer 51. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the filters 6, 51 and 7, in that order integral with each other, since it has been held that making in one piece an article which has formerly been formed in multiple pieces involves only routine skill in the art, see *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965), and that a mere rearrangement of element without modification of the operation of the device involves only routine skill in the art, see *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975). Here, all the filters in

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Suda's system operate in an additive fashion (i.e., all their transmission spectra are superimposed on each other to produce a composite spectrum for the light that is incident onto the photoelectric elements). Furthermore, an integral filter structure is more compact and does not require optical alignment.

Response to Applicant's Arguments

Applicant's arguments filed 8/29/07 have been fully considered but they are not persuasive.

Regarding Applicant's argument that Suda's secondary filter 7 is selected to generally attenuate entire bands of wavelengths, the examiner respectfully disagrees and notes that, as can be seen from Figs. 10 and 12, the location of the minimum in the transmission curve of filter 7 is such relative to the location of the color bands of the first layers (see curves 16' and 17'), so that said filter 7 attenuates wavelengths along the falling edge of curve 16' and along the rising edge of curve 17'.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308. The examiner can normally be reached on M-F, 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEONIDAS BOUTSIKARIS
PRIMARY EXAMINER

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August 31, 2007